

SUPPLEMENTAL AMENDMENT TO THE CLAIMS:

Please cancel pending claims 24–29, 36–39 and 56 without prejudice. Please further amend the remaining claims as follows, substituting any amended claim(s) for the corresponding pending claim(s):

Claims 1–15 (Canceled).

16. (Currently Amended) A vending method for determining whether a product is delivered, the method comprising:

 sending a delivery signal to a product delivery system based on a customer ordering event;
 monitoring a delivery path that the ordered product travels to reach a product receiving location with a monitoring system located along the delivery path ~~for detecting~~ to detect when the product passes through the delivery path, the monitoring system optically scanning the delivery path for the product transition past the monitoring system using a plurality of ~~discrete light beams each emitted by one of a plurality of light emitters and detected by at least one of a corresponding plurality of light detectors~~ by (a) separately activating at least one but fewer than all of the light emitters and (b) for each of the light emitters when that light emitter is activated, monitoring at least two of the light detectors; and

 determining if the product was delivered to the receiving location.

17. (Currently Amended) The method of claim 16 wherein the monitoring further comprises:
~~transmitting one or more~~ emitting light beams from at least one of the ~~plurality of~~ light emitters when that at least one light emitter is activated;
for each light emitter when activated, monitoring ~~to receive the one or more light beams~~ light ~~received at at least one~~ two or more of the ~~corresponding~~ light detectors; and
determining whether an interruption of ~~any of the light beams~~ from the at least one activated light emitter to the two or more light detectors has occurred.
18. (Currently Amended) The method of claim 17 further comprising:
activating each of the light emitters in a sequential series; and
activating ~~one~~ two or more of the ~~corresponding~~ light detectors concurrently with the activated light emitter.
19. (Currently Amended) The method of claim 16 wherein the ~~the~~ light emitters emit an infrared signal when activated.

20. (Previously Presented) The method of claim 16 further comprising:
upon failure of a first attempt to deliver the product, attempting redelivery of the product for one or more of a predetermined number of attempts; and
providing the customer one or more alternative choices upon failure to deliver the product after the one or more predetermined number of attempts.
21. (Previously Presented) The method of claim 20 wherein the step of providing the customer with an alternative choice further comprises:
providing the customer alternatively with a first choice to request a second product; and
providing the customer alternatively with a second choice to request a refund associated with the customer ordering event.
22. (Previously Presented) The method of claim 16 activating the monitoring system to monitor the delivery path in response to the delivery signal.
23. (Previously Presented) The method of claim 22 further comprising deactivating the monitoring upon delivery of the product.

Claims 24–33 (Canceled).

34. (Currently Amended) The method of claim 18 wherein the plurality of light detectors are each substantially aligned with a corresponding light emitter, the method further comprising:

detecting light ~~beams~~ emitted by each of the light ~~emitters~~ emitter when activated using the ~~aligned a~~ light detector substantially aligned with the activated light emitter and at least one of two light detectors adjacent to the substantially aligned light detector.

35. (Previously Presented) The method of claim 20, further comprising:

storing data associated with the customer ordering event and redelivery attempts.

Claims 36–39 (Canceled).

40. (Currently Amended) A method of enabling verification of the delivery of a ordered product in a vending machine, the method comprising:

~~providing an ordering system for receiving a customer order of a product;~~

providing a product delivery system for ~~sending the~~ dispensing a product, ~~located in a first,~~
from a product storage position, ~~through along~~ a delivery path to a ~~second;~~ product receiving delivery
position in response to a customer order;

providing a monitoring system ~~located along the delivery path for detecting when the product~~
passes ~~through the delivery path from the first position to the second position~~ the monitoring system,
the monitoring system ~~optically scanning the delivery path for the product transition using a plurality~~
~~of discrete light beams each emitted by one of a plurality of light emitters and detected by at least~~
~~one of a corresponding plurality of light detectors~~ opposite the light emitters, and

~~providing a reporting circuitry electronically coupled to the monitoring system, wherein the~~
~~reporting circuitry reports the result of the customer order~~

each light emitter, when activated, emitting light across the delivery path onto a plurality of
the light detectors,

wherein the emitted light from an activated light emitter is detected, unless interrupted, using
two or more of the plurality of light detectors.

41. (Currently Amended) The method of claim 40, wherein ~~each~~ at least one of the two or more light detectors detects interruption of a light beam emitted by a ~~corresponding~~ the activated light emitter.

42. (Currently Amended) The method of claim 41, wherein the monitoring system includes a logic circuit electronically coupled to the ~~optical circuitry for determining whether~~ monitoring system, wherein passage of the product passed through along the delivery path is detected, the ~~determining occurring by the logic circuit~~ receiving a first logic result when light from the activated light emitter is detected at all of the two or more light detectors[[,]] and a second logic result when light from the activated light emitter is not detected at at least one of the two or more light detectors.

43. (Currently Amended) The method of claim 42, wherein the logic ~~circuitry~~ circuit further comprises:

- an input from the product delivery system;
- an input from the ~~optical circuitry~~ monitoring system; and
- an output from a comparison circuit, ~~whereby the output comprises of a resulting comparison between~~ based upon the input from the product delivery system and the input from the ~~optical circuitry, wherein the resulting comparison determines if~~ monitoring system, the output indicating whether a delivery attempt by the product delivery system resulted in ~~an~~ actual delivery of the product ~~to the receiving position~~.

44. (Currently Amended) The method of claim 41, wherein the light emitted by the activated light emitter is an infrared light.

45. (Currently Amended) The method of claim 41, wherein each of the plurality of light emitters is aligned approximately across from one of the corresponding light detector, wherein the delivery path ~~lies in between the plurality of light emitters and the corresponding light detectors.~~

46. (Currently Amended) The method of claim 41, wherein the ~~plurality of discrete light beams~~ light emitters and the corresponding light detectors are aligned such that ~~the~~ spacing between ~~the detectible~~ beams within light emitted by the activated light emitter accounts for a smallest product that ~~transitions through~~ passes along the delivery path.

47. (Currently Amended) The method of claim 41, wherein ~~the~~ power of the ~~plurality of light beams~~ emitted by the activated light emitter is adjusted to compensate for ambient light effects.

48. (Currently Amended) The method of claim 41, wherein ~~the~~ power of the ~~plurality of light beams~~ emitted by the activated light emitter is adjusted to compensate for reflected light effects.

49. (Currently Amended) The method of claim 41, ~~wherein the reporting circuitry further~~
~~comprises~~ further comprising:

providing a data storage device for storing information concerning ~~the~~ customer orders.

50. (Currently Amended) The method of claim 41, ~~wherein the reporting circuitry further~~
~~comprises~~ further comprising:

providing a logic circuit for determining whether to offer another vend attempt ~~to the~~
~~customer~~ based upon a comparison between ~~the~~ a result of the customer order and a predetermined
rule.

51. (Currently Amended) The method of claim 41, wherein ~~the~~ delivery of a set of products is
prevented if a product delivery is not detected.

52. (Currently Amended) The method of claim 41, ~~wherein the reporting circuitry further~~
~~comprises~~ 49, further comprising:

providing a display device wherein an operator can retrieve the information.

53. (Currently Amended) A method of enabling verification of the delivery of an ordered product within a vending system, the method comprising:

~~providing an ordering system for receiving a customer order of a product;~~

providing a product delivery system for ~~sending the~~ dispensing a product, ~~located in a first,~~
from a product storage position, through along a delivery path to a second; product ~~receiving~~ delivery
position in response to a customer order; and

providing a monitoring system ~~located along the delivery path for~~ detecting when the product
passes ~~through the delivery path from the first position to the second position~~ the monitoring system,
the monitoring system optically scanning the delivery path for passage of the product ~~transition~~ and
including:

at least one light emitting source;

at least one light ~~detection-source~~ detector, wherein the at least one light ~~detection~~
~~source~~ detector detects a change in a light from the light-emitting source; and

an optical detection aperture, wherein the aperture is used to reduce ~~the a~~ range of
incident angles of light that may be detected by the at least one light ~~detection-source~~
detector; and

providing a reporting circuitry electronically coupled to the monitoring system, wherein the
~~reporting circuitry reports the result of the customer order.~~

54. (Currently Amended) A method of enabling verification of the delivery of an ordered product, the method comprising:

~~providing an ordering system for receiving a customer order of a product;~~

providing a product delivery system for ~~sending the~~ dispensing a product, ~~located in a first,~~
from a product storage position, ~~through~~ along a delivery path to a ~~second;~~ product receiving delivery
position in response to a customer order; and

providing a monitoring system ~~located~~ along the delivery path for detecting when the product
passes ~~through the delivery path from the first position to the second position~~ the monitoring system,
the monitoring system optically scanning the delivery path for passage of the product ~~transition~~ and
including:

at least two light ~~emitting sources~~ emitters;

at least two light ~~detecting sources~~ detectors; and

a controller that sends a signal to a first one of the at least two light ~~emitting sources~~
emitters activating and then deactivating the first one of at least two light ~~emitting sources~~
emitters,

wherein the signal is cycled by the controller to a next ~~emitting source~~ light emitter
of ~~the~~ at least two light ~~emitting sources~~ emitters after expiration of a first set time period,
and

wherein an emitter cycle in which the signal is cycled by the controller to all of the
at least two light ~~emitting source~~ emitters is completed within a second time period, wherein

the second time period is determined by a shortest delivery path travel time of a product past

the monitoring system; and

~~providing a reporting circuitry electronically coupled to the monitoring system, wherein the~~

~~reporting circuitry reports the result of the customer order.~~

55. (Currently Amended) A method of enabling verification of the delivery of an ordered product in a vending system, the method comprising:

~~providing an ordering system for receiving a customer order of a product;~~

providing a product delivery system for ~~sending the~~ dispensing a product, ~~located in a first,~~
from a product storage position, through along a delivery path to a second, product receiving delivery
position in response to a customer order; and

providing a monitoring system ~~located along the delivery path for detecting when the product~~
~~passes through the delivery path from the first position to the second position~~ the monitoring system,
the monitoring system optically scanning the delivery path for passage of the product ~~transition~~ and
including:

at least one light ~~emitting source~~ emitter;

at least one light ~~detection source~~ detector, wherein the at least one light ~~detection~~
~~source~~ detector detects a change in a light from the light-~~emitting source~~ emitter, and

wherein the at least one light ~~emitting source~~ emitter and the at least one light
~~detection source~~ detector are aligned such that the spacing between detectible beams
therebetween accounts for ~~the a~~ a smallest product that ~~transitions through~~ passes along the
delivery path,

wherein the detectible beams comprise portions of light emitted from the at least one
light ~~emitting source and~~ emitter that are detected by an aligned light detector and two light
detectors adjacent to the aligned light detector; ~~and~~

~~providing a reporting circuitry electronically coupled to the monitoring system, wherein the reporting circuitry reports the result of the customer order.~~

Claim 56 (Canceled).

57. (Currently Amended) A method of monitoring operation of a vending machine comprising:

providing an ordering system for accepting customer orders;

providing a delivery path ~~through~~ along which a product ordered by a customer ~~from the ordering system~~ travels;

providing a set of signal emitting devices located along the delivery path, the signal emitting devices and sequentially each emitting a signal;

providing a set of signal detecting devices located across the delivery path from the set of signal emitting devices, ~~at least one~~ each signal detecting device of the set of signal detecting devices being substantially aligned with a corresponding signal emitting device of the set of signal emitting devices, ~~the at least one signal detecting device~~ and having at least one adjacent signal detecting device, the at least one signal detecting device and the at least one adjacent signal detecting device operable to ~~receive~~ detect the signal from the corresponding signal emitting device; and

providing a logic circuit connected to set of the signal detecting devices, the logic circuit determining whether a product ~~is delivered~~ passes along the delivery path from an output of the set of signal detecting devices.

58. (Currently Amended) A method of monitoring operation of a vending machine comprising:
optically scanning a delivery path ~~through~~ which a product ordered by a customer travels
using ~~a linear~~ an array of emitters on one side of the delivery path and ~~a linear~~ an array of detectors
on an other side of the delivery path, wherein a first emitter with the emitter array is actuated alone,
a second emitter within the emitter array is actuated alone, and each remaining emitter within the
emitter array, if any, is successively actuated alone until all emitters within the emitter array have
been actuated, and

wherein at least first and second detectors within the detector array are employed to detect
light from the first emitter when the first emitter is actuated and to detect light from the second
emitter when the second emitter is actuated.

59. (Currently Amended) The method of claim 58, wherein, once all emitters within the emitter
array have been actuated, actuation of the first, second and any remaining emitters is repeated in
cyclic fashion.

60. (Currently Amended) The method of claim 59, wherein a period required for all emitters
within the emitter array to be actuated at least once is less than a period required for a product to pass
through a portion of the delivery path optically scanned by using the emitters and detectors.

61. (Currently Amended) A method of monitoring operation of a vending machine comprising:
optically scanning a delivery path through which a product ordered by a customer travels
using ~~a linear~~ an array of emitters on one side of the delivery path and ~~a linear~~ an array of detectors
on an other side of the delivery path, wherein each emitter within the array is individually actuated
together with two or more corresponding detectors to detect passage of the product through the
delivery path by interruption of light received at any of the two or more corresponding detectors from
the respective emitter.

Please add the following new claims:

62. (Newly Added) A method of enabling control based upon product delivery in a vending machine, the method comprising:

providing a row of light emitters;

providing a row of light detectors opposite the light emitters, each light detector substantially aligned with one of the light emitters, wherein light from each light emitter, when activated, impinges upon a plurality of the light detectors;

providing a controller individually and sequentially activating the light emitters in a cyclic manner; and

providing logic generating a first logical signal when portions of light emitted by an activated one of the light emitters are detected at all of two or more of the light detectors and a second logical signal when at least one portion of the light emitted by the activated light emitter is not detected at at least one of the two or more light detectors.

63. (Newly Added) The method according to claim 62, wherein the row of light emitters includes at least a first light emitter at one end of the light emitter row, a last light emitter at an opposite end of the light emitter row, and a second light emitter between the first and last light emitters, wherein the row of light detectors includes at least a first light detector at one end of the light detector row, a last light detector at an opposite end of the light detector row, and a second light detector between the first and last light detectors, and wherein the first and second light detectors are employed to detect light from the first light emitter when the first light emitter is activated, the first and second light detectors and one other of the light detectors are employed to detect light from the second light emitter when the second light emitter is activated, and the last detector and one other of the light detectors are employed to detect light from the last light emitter when the last light emitter is activated.

64. (Newly Added) The method according to claim 62, wherein the light emitters and the light detectors are spaced such that spacing between detectible portions of light emitted by the light emitters when activated is smaller than a smallest product to be detected by passing between the light emitters and the light detectors.

64. (Newly Added) The method according to claim 62, wherein only portions of light emitted by the light emitters when activated that are detectible by the light detectors, and wherein the light emitters and the light detectors are spaced such that spacing between the detectible portions of emitted light is smaller than a smallest dimension of a smallest product to be detected by passing between the light emitters and the light detectors.

65. (Newly Added) The method according to claim 62, wherein the controller is adapted to activate all of the light emitters within a time period determined by a shortest travel time for a product passing between the light emitters and the light detectors.

66. (Newly Added) The method according to claim 62, wherein the controller is adapted to adjust a power of light emitted by the light emitters.

67. (Newly Added) The method according to claim 62, wherein the controller is adapted to operate in a calibration mode and in a monitoring mode.

68. (Newly Added) The method according to claim 67, wherein the controller is adapted to operate in the calibration mode prior to receipt of a customer order and switch to the monitoring mode upon receipt of the customer order.

69. (Newly Added) The method according to claim 67, wherein the controller is adapted to operate in the monitoring mode prior to detection of product delivery and switch to the calibration mode after product delivery is detected.

70. (Newly Added) The method according to claim 62, wherein the controller is adapted to activate each light emitter for a series of pulses before sequencing to a next light emitter within the light emitter row.

71. (Newly Added) The method according to claim 62, wherein the light detectors include optical filters attenuating visible light.

72. (Newly Added) The method according to claim 62, wherein apertures between the light emitters and the light detectors reduce reflected light originating from the light emitters reaching the light detectors.